In the Specification:

At page 4, lines 8, 26, 30, 35 and page 5, lines 7, please amend the specification as follows.

HBA device driver 110 includes a common transport (CT) pass-through 112, an extended link service (ELS) pass-through 114 and a small computer system interface (SCSI) protocol driver 116. The CT pass-through 112 and the ELS pass-through 114 are coupled to the management application agents 108 that provides the CT protocol and ELS protocol communications functions. The SCSI protocol driver 116 is coupled to the host operating system 108 for conventional flow control of data. HBA firmware 118 and HBA hardware ~~120~~ 119 is coupled between the HBA device driver 110 and a storage area network (SAN) 120. SAN 120 includes a fibre channel (FC) fabric and link services 122. The CT pass-through 112 and the ELS pass-through 114 are binary pass-throughs that each takes applied commands and passes the received commands to the SAN 120. CT operations from the management application agents 108 to the FC fabric and link services 122 are indicated by dotted lines. ELS operations from the management application agents 108 to the FC fabric and link services 122 are indicated by dashed lines. A SCSI storage device 124 is shown associated with the SAN cloud 120. FC fabric and link services 122 include multiple switches and hubs for connection of a plurality of FC devices 126 (one shown). FC fabric and link services 122 receive commands from the HBA firmware 118, HBA hardware ~~120~~ 119 and sends data back via the HBA firmware 118, HBA hardware ~~120~~ 119.

In accordance with features of the preferred embodiment, SAN management application 102 prepares a variety of commands at different levels of fibre channel specification, for example, CT and ELS commands. The SAN connected host system 104 communicates with the management application agents 108 which communicates with the HBA device driver 110 and HBA firmware 118, HBA hardware ~~120~~ 119, which communicates with devices 126 in the SAN cloud 120.

In accordance with features of the preferred embodiment, in the SAN connected host system 104, the HBA device driver 110 and HBA firmware 118, HBA hardware ~~120~~ 119 support the CT pass-through 112 and the ELS pass-through 114, such that a variety of commands, at different levels of the fibre channel specification, for example CT and ELS protocols, are prepared by the SAN management application agent 108, and passed via the HBA device driver 110 including the CT pass-through 112 and the ELS pass-through 114 and HBA firmware 118, HBA hardware ~~120~~ 119 to a designated device where the commands are executed. As a result the problem of requiring micro code specific to multiple vendors is avoided. A reply can be generated on the device, and that reply returns to the SAN management program 102 via the same path of the commands.

In accordance with features of the preferred embodiment, the SAN connected host system 104 including the HBA device driver 110 and HBA firmware 118, HBA hardware ~~120~~ 119 supporting the CT pass-through 112 and the ELS pass-through 114 allow several kinds of commands to be issued. For example, the commands include topology analysis commands, such as what is connected to what,

and in what zone, and the like. The commands include performance analysis commands, such as access frame counters, data volume and the like. The commands include attribute analysis commands, such as disk drive number of blocks in use or free. The commands include configuration commands, such as to bring disks on or off line, swap spare disks, archive data, move disks between SAN zones, and the like.